TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. 03-004712

In Re Application Of: Sadafuku Hayashi

SEP 14 2006
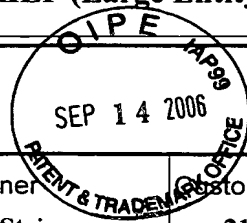
Application No. 10/748,165	Filing Date December 31, 2003	Examiner Julie E. Stein	Customer No. 21254	Group Art Unit 2617	Confirmation No. 6956

Invention: MOBILE COMMUNICATION SYSTEM, RADIO TERMINAL USED THEREFOR. RADIO NETWORK CONTROLLER AND OPERATION CONTROL METHOD THEREFOR

COMMISSIONER FOR PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed on:

July 14, 2006

The fee for filing this Appeal Brief is: **$500.00**

☒ A check in the amount of the fee is enclosed.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. <u>50-0481</u> I have enclosed a duplicate copy of this sheet. (Deficiencies only)

☐ Payment by credit card. Form PTO-2038 is attached.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Signature

Dated: **September 14, 2006**

Peter F. McGee, Esq.
Registration No. 35,947
Sean M. McGinn, Esq.
Registration No. 34,386
McGinn Intellectual Property Law Group, PLLC
8321 Old Courthouse Rd.
Suite 200
Vienna, VA 22182

CC:

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on
_____.
(Date)
Signature of Person Mailing Correspondence
Typed or Printed Name of Person Mailing Correspondence

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Sadafuku HAYASHI

Serial No.: 10/748,165   Group Art Unit: 2617

Filed: December 31, 2003   Examiner: Stein, Julie E.

For: MOBILE COMMUNICATION SYSTEM, RADIO TERMINAL USED
THEREFOR, RADIO NETWORK CONTROLLER AND OPERATION CONTROL
METHOD THEREFOR

MS Appeal Brief - Patents
Honorable Commissioner of Patents
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

       Further to the Notice of Appeal filed July 14, 2006, Appellant respectfully

submits this Appeal Brief in the above-identified application.

Application/Control No. 10/748,165
Docket No. 03-004712
YAN.041

TABLE OF CONTENTS

* * * * *

2

REAL PARTY IN INTEREST

The real party in interest is NEC Corporation, the assignee of record.

RELATED APPEALS AND INTERFERENCES

(none)

STATUS OF CLAIMS

Claims 2-3 and 28-32 stand rejected and are on appeal, as follows:

Claim 1.   (Canceled)

Claim 2.   (Rejected)

Claim 3.   (Rejected)

Claims 4-27. (Canceled)

Claim 28.   (Rejected)

Claim 29.   (Rejected)

Claim 30.   (Rejected)

Claim 31.   (Rejected)

Claim 32.   (Rejected)

Application/Control No. 10/748,165
Docket No. 03-004712
YAN.041

STATUS OF AMENDMENTS

All amendments, including the amendment filed June 2, 2006 after final rejection, have been <u>entered</u>.

SUMMARY OF CLAIMED SUBJECT MATTER

The invention is directed to mobile communications systems. The systems are arranged and operated to deliver identical data from a data source to a plurality of radio terminals. The mobile communication system includes a plurality of radio network controllers (RNCs), each controller maintaining a count of the number of radio terminals connected to the controller to receive the data from the data source and control delivery of the data within an associated cell. The methods and systems accommodate movement of the radio terminal from the first cell to a second cell by connecting the radio terminal to the controller associated with the second cell and responsively <u>decrementing the count of connected radio terminals maintained by the controller associated with the first cell</u> and <u>incrementing the count of connected radio terminals maintained by the controller associated with the second cell</u>. See Specification, p. 9, lines 3-23, and FIG. 2, blocks S12, S14. The protocol for delivering data is determined based on a comparison of connected radio terminal counts to predetermined numbers.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 2-3 and 28-32 are unpatentable under 35 U.S.C. §103(a) over

U.S. Patent No. 6,701,155 to Sarkkinen et al. in view of UK patent app. No. 2 371 179

A in the name of Ericsson.

ARGUMENT

Rejection under 35 U.S.C. § 103(a) over Sarkkinen et al. in view of Ericsson

1. <u>The rejection fails as a matter of law</u>:

The Office has not established *prima facie* obviousness with respect to the rejected claims 2-3 and 28-32. In order to established *prima facie* obviousness under 35 U.S.C. § 103(a), the prior art must suggest the missing claim limitations. See MPEP 2142.

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the <u>prior art</u> reference (or references when combined) <u>must teach or suggest all the claim limitations</u>. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added.)

There is no motivation or suggestion, either in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the reference teachings. There is no reasonable expectation of success, since, for example, Sarkkinen et al. teaches away from the proposed combination.

2. <u>The rejection fails as a matter of fact</u>:

The cited references to Sarkkinen et al. and Ericsson do not teach or suggest all the claim limitations.

9

Application/Control No. 10/748,165
Docket No. 03-004712
YAN.041

A. Independent claims 28-30:

The Sarkkinen et al. Reference

Sarkkinen et al. also does not teach or suggest a communication system, method, or program in which, in response to connection of a radio terminal to a controller associated with a second cell, the count of connected radio terminals maintained by the circuitry for counting in the controller associated with the first cell is decremented and the count in the controller associated with the second cell is incremented.[1]

Sarkkinen et al. discloses a mobile communications system that includes radio network controllers (RNCs) 30, 35. Circuitry for maintaining a count of the number of radio terminals connected to an RNC is located in components of the <u>core network</u> (CN 50). See FIG. 1 of attached copy of Sarkkinen et al. Sarkkinen et al. does not teach or suggest a <u>controller</u> (RNC 30, 35, FIG. 1) containing "circuitry for counting the number" of connected radio terminals (UEs 11, 12).

The Office admits as much in the Final Rejection dated March 23, 2006 (copy attached), but contends that those of ordinary skill in the art would have understood that "a counter" would have been included in the RNCs because count information relating to the UEs would have been helpful to the RNCs for various reasons, including to calculate load information and the like. See the last sentence on page 3 of the Final Rejection. Appellant notes, however, that the claimed invention does not recite "a counter," and arguments by the Office direction to such are inapposite.

The invention is a communication system in which, in response to connection of a radio terminal to a controller associated with a second cell, the count of connected radio terminals maintained by the circuitry for counting in the controller

---

[1] See claim 28, lines 12-16; claim 29, lines 11-14; and claim 30, lines 13-16.

associated with the first cell is decremented and the count in the controller associated with the second cell is incremented. The Office admits that Sarkkinen et al. does not teach the above recitation.[2]

Indeed, Sarkkinen et al. explicitly discloses that changes in UE information are recognized and maintained within the Core Network. See col. 6, lines 12-14 of Sarkkinen et al.: "After receiving information from the RNC, the SGSN may determine (from the multicast table) if any changes have occurred."

More specifically, Sarkkinen et al. discloses that connected radio terminal information (data related to "user equipment" or "UE") is stored in databases within two CN 50 components, the MSC/VLR 52 and the SGSN 56, described below. Sarkkinen et al. does not suggest any RNC (controller) circuitry for counting the number of UEs (radio terminals) such that, in response to connection of a radio terminal to a controller associated with a second cell, the count of connected radio terminals maintained by the circuitry for counting in the controller associated with the first cell is decremented and the count in the controller associated with the second cell is incremented.

The MSC/VLR 52 and its database are described at col. 3, lines 13-20 of Sarkkinen et al. as follows:

> The CN 50 may include a Mobile Switching Centre/Visitor Location Register (MSC/VLR) 52, which is a switch (MSC) and database (VLR) that serves an (sic) UE in its current location for circuit switched (CS) services. The MSC function may be used to switch the CS transactions, and the VLR function may maintain information regarding the visiting user's service profile, as well as information on the UE's location within the serving system.

The SGSN and its database are described by Sarkkinen et al. thus:

---

[2] See the first paragraph on page 6 of the Final Rejection.

> Furthermore, the CN 50 may include a Serving GPRS (General Packet
> Radio Services) Support Node (SGSN) 56 having a <u>function similar</u> to
> the MSC/<u>VLR</u> 52 but it may be used for packet switched (PS) services.[3]

Thus, Sarkkinen et al. teaches that UE/radio terminal information such as counts of

connected terminals is maintained in the CN 50 circuitry, not in circuitry of the

controller RNCs.

The Final Rejection notes the teaching in Sarkkinen et al. that the RNCs send

an indication to the SGSN when a new UE moves into the RNC's cell. Appellant

urges, however, that this teaching of Sarkkinen et al. suggests nothing about

decrementing a count maintained in circuitry of a first controller and incrementing a

count maintained in circuitry of a second controller. Instead, the noted teaching in

Sarkkinen et al. relates to how UE information is provided to the SGSN database, for

example, and, indeed, emphasizes that the UE data is stored in the SGSN.

Significantly, Sarkkinen et al. points to several important reasons for

maintaining UE information in the SGSN database. For example, the SGSN routes

multicast data based on UE information in its database. Further, the system is made

<u>more efficient</u> because the SGSN may define its requests. In order to make necessary

evaluations, the SGSN needs to be aware of the number of different service

subscribers or multicast members in a cell. See col. 8, line 58 to col. 9, line 6 of

Sarkkinen et al. In addition, for broadcast services, the SGSN does not have to ask

any status information from the RNCs. See col. 8, lines 8-11.

According to the Sarkkinen et al. disclosure, UE information is transferred to

the SGSN database by one of three processes: By periodic status requests, by an

information update procedure, or by triggering-based status inquiry. See col. 9, lines

---

[3] See Sarkkinen et al. at col., lines 29-33.

12

16-19 of Sarkkinen et al.

A status response from the RNC may include multicast service identities, multicast group identities, multicast UE identities, and the number of UEs in each service. Appellant respectfully submits, however, that the number of UEs in each service provided by the status response from the RNCs does not teach or suggest a communication system in which, in response to connection of a radio terminal to a controller associated with a second cell, the count of connected radio terminals maintained by the circuitry for counting in the controller associated with the first cell is decremented and that the count of connected radio terminals maintained by the circuitry for counting in the controller associated with the second cell is incremented.

Importantly, too, Sarkkinen et al. discloses no circuitry or configuration by which, when the radio terminal associated with a first cell moves to a second cell, such a "count of connected radio terminals maintained by the circuitry for counting in the controller" in the first cell is decremented, concomitantly, the count of connected radio terminals <u>maintained by the circuitry for counting in the controller</u> is incremented in the second cell. Instead, only the SGSN recognizes changes from one status response to the next, according to Sarkkinen et al. There is no teaching or suggestion in Sarkkinen et al. that an ongoing count of connected terminals is maintained incrementally by circuitry for counting in the RNCs.

Further, there is no teaching or suggestion in Sarkkinen et al. that a UE moving from one cell to another is removed from a count maintained by circuitry for counting connected radio terminals in the RNC of the first cell and incremented to a count maintained by circuitry for counting connected radio terminals in the RNC of the second cell. Instead, Sarkkinen et al. teaches or suggests that core network component databases, such as the SGSN, maintain the UE counts.

13

The Ericsson Reference

Ericsson does not remedy the deficiencies of Sarkkinen et al. Ericsson has been cited because Sarkkinen et al. does not teach the features noted above, as admitted in the Final Rejection. The Final Rejection also admits, however, that Ericsson does not teach these features. Consequently, by its own admission, the prior art cited by the Office does not teach all of the claim limitations.

It is asserted in the Final Rejection, without support, that it would have been obvious to have the RNCs update each other, because RNCs update each other in Ericsson. The suggested motivation for having the RNCs update each other is a presumed lessening of the "burden" on the SGSN taught by Sarkkinen et al.

Appellant respectfully disagrees that a prior art teaching of RNCs updating other RNCs suggests that counts maintained in the SGSN database of Sarkkinen et al. should be maintained, instead, in the RNCs. As noted above, for example, fundamental functionality of Sarkkinen et al. relies importantly on the data being maintained in the SGSN database. Thus, Appellant notes that removing from the SGSN the 'burden' of maintaining a count of UEs would render the invention of Sarkkinen et al. inoperable for its intended purpose.

It is also asserted in the Final Rejection that it would have been obvious that the RNCs would keep count of connections. The motivation is said to come from a need to keep better track of various network parameters. No such motivation can be found in the cited prior art. Further, Sarkkinen et al. discloses, as noted above, that the system is made efficient by keeping counts in the SGSN. Further, as noted above, the claimed invention does not recite that the RNCs simply keep count of connections.

Thus, the contention in the Final Rejection that replacing the SGSN UE database with RNC databases would have been obvious lacks proper motivation. Indeed, removing the UE databases would render the system disclosed in Sarkkinen et al. inoperable for its intended purpose.

Thus, the teachings of Sarkkinen et al. noted in the Final Rejection as supporting the combination are considered by Appellant to teach away from the proposed combination. For example, on page 6 of the Final Rejection it is noted that Sarkkinen et al. teaches the RNC sending an indication to the SGSN when a new UE moves into the RNC's cell. Appellant can find no suggestion in the cited prior art that would motivate one to modify Sarkkinen et al. so that the data remained in the RNC and not be sent to the SGSN. In particular, the teaching from Ericsson noted in the Final Rejection that a first RNC updates a second RNC provides no motivation to modify Sarkkinen et al. as would be required to produce the invention.

B. Dependent claims 2-3 and 31-32:

Claims 2-3 depend directly from claim 29. Claim 29 is patentable over the cited prior art as set forth above, as are its dependent claims 2-3. Claims 2 and 3 are directed to decrementing and incrementing the counts of connected radio terminals maintained by the controller in response to movement of the radio terminal from the first cell to the second cell during particular periods of operation. In claim 2, the movement occurs before data reception, after the radio terminal has joined the service. In claim 3, the movement occurs during an idle mode or a standby state. Applicant notes that since the cited prior art does not teach or suggest the recited decrementing and incrementing steps, it does not matter when the steps occur: The cited prior art fails to teach or suggest the decrementing and incrementing at any

step of the method. The argument that portions of either one of the prior art systems *can* achieve an idle mode or standby state is inapposite to whether the recited decrementing and incrementing take place during those periods.

Claims 31-32 depend directly from claim 30, and recite limitations regarding movement of the radio terminal during certain operational periods that correlate with the operation periods recited in claims 2-3, respectively. As noted similarly above, since the cited prior art does not teach or suggest the recited decrementing and incrementing steps, or a program causing execution of the steps, it does not matter when the steps occur: The cited prior art fails to teach or suggest the decrementing and incrementing at any step of the method. The argument that portions of either one of the prior art systems *can* achieve an idle mode or standby state is inapposite to whether the recited decrementing and incrementing take place during those periods.

CONCLUSION

In view of the foregoing, Appellant submits that claims 2-3 and 28-32, all the claims presently pending in the application, are patentably distinct over the prior art of record and are allowable, and that the application is in condition for allowance. Such action would be appreciated.
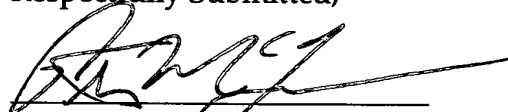
To the extent necessary, Appellant petitions for an extension of time under 37 CFR §1.136.

Application/Control No. 10/748,165
Docket No. 03-004712
YAN.041

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 14 September 2006

Peter F. McGee, Esq.
Registration No. 35,947

Sean M. McGinn, Esq.
Registration No. 34,386

**MCGINN INTELLECTUAL PROPERTY
 LAW GROUP, PLLC**
8321 Old Courthouse Road, Suite 200
Vienna, VA 22182-3817
(703) 761-4100
Customer No. 21254

OIPE
SEP 14 2006
PATENT & TRADEMARK OFFICE

CLAIMS APPENDIX

1. (Canceled)

2. (Previously presented) The method according to claim 29, wherein the movement of the radio terminal between radio network controllers is movement during a period before data reception after said radio terminal has joined the service.

3. (Previously presented) The method according to claim 29, wherein the movement of the radio terminal is movement during an idle mode or a standby state.

4-27. (Canceled)

28. (Previously presented) A mobile communication system for delivering identical data from a data source to a plurality of radio terminals, said mobile communication system comprising a plurality of radio network controllers, each controller including circuitry for counting the number of radio terminals connected to such controller to receive the data from the data source and circuitry for controlling delivery of the data within an associated cell, wherein the system is arranged and configured such that:

i

when a radio terminal within a first cell is connected to the controller

associated with the first cell, upon movement of the radio terminal from the first cell

to a second cell, the radio terminal establishes connection to the controller associated

with the second cell;

in response to connection of the radio terminal to the controller associated

with the second cell, the count of connected radio terminals maintained by the

circuitry for counting in the controller associated with the first cell is decremented

and the count of connected radio terminals maintained by the circuitry for counting

in the controller associated with the second cell is incremented;

the number of radio terminals connected to the controller associated with the

second cell is compared with a predetermined number;

if the number of radio terminals connected to the controller associated with

the second cell is less than the predetermined number, a dedicated channel is set

between the radio terminal and the controller associated with the second cell;

if the number of radio terminals connected to the controller associated with

the second cell is equal to or greater than the predetermined number, a common

channel is set between the radio terminal and the controller associated with the

second cell; and

the data is delivered from the controller associated with the second cell to the

radio terminal over the set channel.

29. (Previously presented) A method of operating a mobile communication

system to deliver identical data from a data source to a plurality of radio terminals,

the mobile communication system including a plurality of radio network controllers,

each controller maintaining a count of the number of radio terminals connected to

such controller to receive the data from the data source and controlling delivery of

the data within an associated cell, said method comprising:

connecting a radio terminal within a first cell to the controller associated with

the first cell;

upon movement of the radio terminal from the first cell to a second cell,

connecting the radio terminal to the controller associated with the second cell;

decrementing the count of connected radio terminals maintained by the

controller associated with the first cell;

incrementing the count of connected radio terminals maintained by the

controller associated with the second cell;

comparing the number of radio terminals connected to the controller

associated with the second cell with a predetermined number;

if the number of radio terminals connected to the controller associated with the second cell is less than the predetermined number, setting a dedicated channel between the radio terminal and the controller associated with the second cell;

if the number of radio terminals connected to the controller associated with the second cell is equal to or greater than the predetermined number, setting a common channel between the radio terminal and the controller associated with the second cell; and

delivering the data from the controller associated with the second cell to the radio terminal over the set channel.

30. (Previously presented) A computer readable medium having stored thereon a program for causing a computer to execute an operation control method to cause a mobile communication system to deliver identical data from a data source to a plurality of radio terminals, the mobile communication system including a plurality of radio network controllers, each controller maintaining a count of the number of radio terminals connected to such controller to receive the data from the data source and controlling delivery of the data within an associated cell, said

method comprising:

connecting a radio terminal within a first cell to the controller associated with the first cell;

upon movement of the radio terminal from the first cell to a second cell, connecting the radio terminal to the controller associated with the second cell;

decrementing the count of connected radio terminals maintained by the controller associated with the first cell;

incrementing the count of connected radio terminals maintained by the controller associated with the second cell;

comparing the number of radio terminals connected to the controller associated with the second cell with a predetermined number;

if the number of radio terminals connected to the controller associated with the second cell is less than the predetermined number, setting a dedicated channel between the radio terminal and the controller associated with the second cell;

if the number of radio terminals connected to the controller associated with the second cell is equal to or greater than the predetermined number, setting a common channel between the radio terminal and the controller associated with the second cell; and

delivering the data from the controller associated with the second cell to the

radio terminal over the set channel.

31. (Previously presented) The computer readable medium according to

claim 30, wherein the movement of the radio terminal between radio network

controllers is movement before a period until data reception after said radio terminal

has joined the service.

32. (Previously presented) The computer readable medium according to

claim 30, wherein the movement of the radio terminal is movement during an idle

mode or a standby state.

EVIDENCE APPENDIX

(None)

RELATED PROCEEDINGS APPENDIX

(none)